

the other substances experimented with, was very remarkable, it being the only one with which there was an increase in the amount of solid matter eliminated, both organic and inorganic.

From the foregoing experiments the following table embracing the averages of each series of investigations is constructed.

| | Quantity of urine. | Specific gravity. | Total solids. | Inorganic solids. | Organic solids. |
|---------------------------|--------------------|-------------------|---------------|-------------------|-----------------|
| Normal standard | 1474.5 | 1024.30 | 75.31 | 30.17 | 45.14 |
| Digitalis | 1822.8 | 1015.87 | 67.00 | 31.54 | 35.43 |
| Normal standard | 1237.5 | 1022.50 | 61.23 | 23.12 | 38.11 |
| Juniper | 1763.2 | 1016.28 | 61.50 | 25.03 | 36.42 |
| Normal standard | 1358.0 | 1023.51 | 69.35 | 27.22 | 42.13 |
| Squill | 1533.5 | 1020.20 | 60.15 | 30.60 | 29.55 |
| Normal standard | 1280.0 | 1025.08 | 63.12 | 29.83 | 33.29 |
| Colchicum | 1556.6 | 1023.58 | 77.28 | 35.23 | 42.04 |

From the foregoing investigations, I think it is deducible that neither digitalis, juniper, nor squill, increases the total amount of solid matter eliminated by the kidneys, and that the organic matter is considerably reduced through their influence. Although they do increase the amount of inorganic matter removed through the urine, yet as it is the organic matter which is generally considered as contaminating the blood in disease, it is evident they exert no effect whatever in depurating this fluid, but on the contrary are positively injurious.

The results obtained, in so far as the experiments with digitalis, squill, or juniper, are concerned, are similar to those obtained by Krahmer, but are materially different as regards the colchicum. For, although Krahmer found that under the influence of this medicine there was an increase in the amount of organic matter excreted, this was so small as to lead to the supposition that it may have been accidental, and besides there was a reduction in the quantity of inorganic substance removed. It is desirable, therefore, that we should have further observations with this article.—*Proc. Biol. Depart. Acad. Nat. Sciences of Philadelphia*, Dec., 1858.

Clinical Study of the Heart-sounds.—Prof. AUSTIN FLINT has published (*New Orleans Med. News and Hospital Gazette*, Sept. and Oct., 1858) two very interesting letters on this subject. The following series of propositions are given by him as embodying the practical points pertaining to the diagnostic significance of the abnormal modification of the heart-sounds:—

1. Increased intensity of the first sound, the two elements composing this sound being affected equally, is a sign of excited, muscular action of the heart, and is observed in cases of functional disorder without organic disease.

2. Increased intensity of the element of impulsion in the first sound, the intensity of the valvular element not being proportionately augmented, if at all, is a sign of hypertrophy affecting the left ventricle.

3. Diminished intensity of the element of impulsion is a sign of weakened muscular power of the left ventricle, either from organic affections, such as dilatation, or fatty degeneration, or from functional debility of the organ. Cases are to be excluded in which, from the presence of liquid effusion in the pericardium or pleura, or from emphysema, the heart is prevented from coming into contact with the thoracic walls.

4. Abnormal intensity of the mitral valvular element of the first sound, is a sign of excited muscular action of the heart, and is accompanied by a corresponding increase of the intensity of the element of impulsion, as stated in prop. 1st. Abnormal weakness and suppression of this element, the element of impulsion retaining or exceeding its normal intensity, are signs of more or less injury of the mitral valves. A murmur referable to the mitral orifice coexists in the

vast majority of cases. Notwithstanding the murmur, if the valvular element of the first sound referable to the mitral valves, retain nearly or quite its normal intensity, the valves are not seriously damaged. In judging of the normal intensity of the mitral valvular element, it may be compared with the sound emanating from the tricuspid valves.

5. Abnormal intensity of the valvular element referable to the tricuspid valves, is a sign of hypertrophy of the right ventricle, and is generally associated with diminished intensity of the valvular element referable to the mitral valves. Abnormal weakness of the tricuspid valvular element is not available as a physical sign of disease.

6. A *positive* increase of the intensity of the pulmonic second sound of the heart, is a sign of hypertrophy of the right ventricle, in the majority of cases dependent on mitral contraction or insufficiency, or both. A *relative* increase of this sound, *i. e.*, as compared with the aortic second sound, may result from abnormal feebleness of the aortic sound, due to mitral obstruction or regurgitation.

7. Abnormal intensity of the aortic second sound, is not a sign of much importance. But non-diminution of its intensity, in cases in which a murmur referable to the aorta is present, is a sign of much value, indicating that, although aortic lesions exist, the integrity of the valves is not seriously compromised.

8. Diminished intensity of the aortic second sound, in cases in which a murmur referable to the aorta is present, is a sign that the aortic valves are damaged, provided that neither mitral obstruction nor regurgitation exists, an effect of the latter being abnormal feebleness of this sound. If the diminished intensity of the aortic sound be due to injury of the valves of the aorta, there will be likely to be present an aortic regurgitant murmur, in other words, a diastolic murmur referable to the aorta.

9. In cases in which a diastolic murmur is present, referable either to the direct current of blood through the mitral orifice, or to aortic regurgitation, a normal intensity of the aortic second sound is evidence that the lesions giving rise to the murmur are seated at the mitral orifice.

Report of thirteen Cases of Ununited Fracture treated by Subcutaneous Perforation of the Bone.—Prof. BRAINARD states (*Chicago Medical Journ.*, Sept., 1858), that since the publication of his essay on this mode of treating fractures (*Trans. Am. Med. Assoc.*, vol. vii. 1854), a more extended experience has enabled him to form a more just appreciation of the value of this treatment, to ascertain its advantages and defects, and to suggest some improvements in the manner of its performance; and further, that the views formerly expressed concerning the efficacy and safety of the operation are in the main confirmed.

Of the 13 cases of ununited fracture reported in the present paper, *four* were of the *humerus*; *four* of the *femur*; *three* of the *tibia*, and *two* of the *ulna*.

1. *Of the humerus.*—The first of these was of four months' standing, in a healthy man, 30 years of age. Two operations at an interval of ten days were performed, and a cure effected in one month.

The second was of eight months' standing, in a healthy man, 29 years of age. Four operations by perforation were performed at intervals of ten days. Union was advancing, but the patient then put himself under the care of another surgeon.

The third case was one of six months' standing, in a healthy man 24 years of age. Five operations were performed at intervals of a week, and a cure was effected in six weeks.

The fourth case was of five months' standing, in a man whose age and general condition are not stated. He was treated for five weeks by six perforations without benefit. The seton and then resection were tried without producing union.

2. *Of the femur.*—The first of these was in a man 35 years of age, delicate health, of five months' standing. Treatment by eleven perforations during five months; cure.

The second was of four months' standing, in a man 56 years of age, treated by four operations, and cured in six weeks.